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State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

January 15, 2015

Tom Tripp
US Magnesium LLC
238 North 2200 West
Salt Lake City, Utah 84116-2921

Subject: Second Review of Periodic Plan Review Notice of Intention Large Mining Operations, US Magnesium LLC, Rowley/Stansbury Mine, M/045/0008, Tooele County, Utah

Dear Mr. Tripp:

The Division of Oil, Gas and Mining has reviewed the referenced Notice of Intention to Commence Large Mining Operations (Notice) which was received August 29, 2012. The attached comments will need to be addressed before the Notice is approved.

The comments are listed under the applicable Minerals Rule heading; please format your response in a similar fashion. Please address only those items requested in the attached technical review by sending replacement pages using redline and strikeout text. After the Notice is determined technically complete, the Division will request two clean copies. Both copies will be stamped approved, and one will be returned.

The Division will suspend further review until your response to this letter is received. Please contact Leslie Hepler at 801-538-5257 or me at 801-538-5261 if you have questions about the review.

Sincerely,


Paul B. Baker

Minerals Program Manager

PBB:lah:eb

Attachment: Review

cc: LGarahana@blm.gov SAllen@blm.gov rachelbrown@utah.gov

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**SECOND REVIEW OF NOTICE OF INTENTION
TO COMMENCE LARGE MINING OPERATIONS**

**US Magnesium LLC
Rowley/Stansbury Mine
M/045/0008
January 15, 2015**

General Comments:

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
1	General	Submittal should be formatted to easily incorporate additional revisions and amendments.	lah	
2	General	The Division may have additional comments based on the response to this review.	lah	
3	General	The Division requests that you include the permit number on the binder cover and title page (M/045/0008).	lah	
4	Appendix B	As noted on page 23. Appendix B is signed by a PE. Please sign as stated.	lah	
5	Appendix E	Please remove the copy of the letter of credit from the Notice. The letter of credit is kept on file with the minerals program bond coordinator, and changes to the letter of credit would require amendments to the Notice which are not otherwise needed. As a separate document, please submit the signed original \$421,588 letter of credit, as the current document in the Division's file is a copy .	lah	
6	Appendix F	The Division recommends that the reclamation contract be removed. The reclamation contract is kept on file with the bond coordinator. The fact sheet associated with the reclamation contract needs to be updated.	lah	
7	Pages 8 and 36 and Appendixes E, F, and G	Appendix G indicates the posted bond is \$349,866, but according to other portions of the Notice (Page 36 and Appendixes E and F), the amount posted is \$421,588. Please make appropriate changes. Other comments about the reclamation cost estimate are in this review under rule R647-4-113.	lah	

R647-4-104 – Operator Information and Surface and Mineral Ownership

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
8	Page 6 Para 3	This paragraph indicates "this submission is not a 'notice of intention.'" <p>A Notice of Intention is defined as "a notice of intention to commence mining operations, that provide[s] the complete information required for authorization to conduct mining operations, and includes any amendments or revisions thereto." This last phrase indicates a Notice of Intention is continuing—that it is not just for an operation that is going to be "commenced." The Division understands the ongoing nature of the operations and agrees this update is not subject to public notice. The Division recommends that the paragraph be rewritten or perhaps eliminated since it is not vital to the content. If rewritten, the paragraph should state that this is a rewritten or reorganized Notice.</p>	lah pbb	
9	Page 9	Contacts: Include the registered agent for US Magnesium as listed with the Division of Corporations. The Division recommends that Tom Tripp be authorized to sign submittals to the Division, whether as an officer or with a separate authorization, such as a "Delegation of Authority."	lah	

Second Review
Page 3 of 8
M/045/0008
January 15, 2015

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
10	Page 11 Table 3.1	Correct the "Range" number of water right #16-727.	lah	

R647-4-105 - Maps, Drawings & Photographs

General Map Comments

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
11	Omission	Please include a map depicting a visual understanding of water resources in the vicinity of the permit area. For example, please include information on groundwater monitoring wells, springs and flow direction gradient in and around the vicinity of the permit area. The information on surface and groundwater impacts discussed on page 22 should be represented on a map.	aaa	

105.2 - Surface facilities map

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
12	Figure 4.1	On Figure 4.1 show the permit area with a line and show the line on the legend. Include the same line on Figure 4.2 and on the legend for Figure 4.2.	lah, whw	
13	Figure 4.2	Please include a north arrow and scale.	lah	
14	Figure 4.2 & Page 12	The discussion about Figure 4.2 mentions "existing electrical transmission lines, roads, gas pipelines, etc." Please highlight utilities and include symbols in the map legend. Be more specific in the text about what utilities are within the permit boundary, i.e. note in the text what utilities are not in the area. Please include a complete list rather than using the term "etc." Please be specific on each utility.	lah	
15	Figure 4.3	Legend notes "flow control struct,(to be removed/left open)." As discussed please modify to "flow control structures, (to be removed)."	lah	
16	Figure 4.3	Legend notes "breached (proposed)." Rather than indicating "proposed" breaches, please show sites where the dikes are to be breached.	lah	
17	Figure 4.6	Figure 4.6 shows acreage figures for each of the ponds to be used in the mining operation, but it does not appear that any of the maps include a border outlining the acreage disturbed by mining operations, i.e. the disturbed area. Please include such a border on this map or one of the other appropriate maps.	lah, whw, pbb	

105.3 - Drawings or Cross Sections (slopes, roads, pads, etc.)

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
18	Figures 4.7a-4.9	Figure 4.7a says the majority of dikes have 2H:1V slopes. Please be more specific. The Division is more concerned with maximum angles. Please include a statement such as, "no designed dike slope angles exceed *H:1V." Please highlight the slopes that are steeper than 2H:1V; with no scale, the Division cannot determine which slopes are greater than 2H:1V.	lah	

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
19	Omission	As per rule R647-4-105.3, please include maps clearly showing what will be reclaimed and what will be left for a post mining land use.	lah	
20	Omission	Please include a map showing the area(s) where the EPA has jurisdiction for regulation and cleanup.	lah	
21	Omission	As per rule R647-4-105.3.16, please include a geology map.	lah	
22	Omission	Per rule R647-4-110.4, provide a map showing the location of deleterious or acid-forming materials upon the completion of reclamation.	pnb	

R647-4-106 - Operation Plan

106.2 - Type of operations conducted, mining method, processing etc.

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
23	Omission	Please address fuel storage and chlorine as related to deleterious material. (For fuel storage refer to Appendix B.)	lah	
24	Omission	Provide a narrative description of the processing methods used, including whether processes are primary or secondary. As discussed in R647-1-106, primary processes include (but are not limited to) concentrating, milling, evaporation, and leaching. Secondary processes specifically include smelting and refining operations.	pnb	
25	Omission	Briefly describe "possible future" upgrades in the process procedure.	lah	
26	Omission	Identify deleterious or acid-forming materials present or to be left on the site as a result of mining or mineral processing. In rule R647-1-106, deleterious materials are defined as "earth, waste, or introduced materials exposed by mining operations to air, water, weather or microbiological processes, which would likely produce chemical or physical conditions in the soils or water that are detrimental to the biota or hydrologic systems." Deleterious materials may also include (but are not limited to) materials with high alkalinity.	pnb	

106.4 - Nature of materials mined, waste and estimated tonnages

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
27	Pages 18 and 19	Rule R647-4-106.4 is addressed under Section 106.2 beginning on page 16, but the heading on page 18 indicates it is addressed in Section 106.2, 106.5 & 106.6. Please change the section title on page 16 to "106.2 Nature of Operation and 106.4 Nature of Material Mined," and remove 106.4 on page 18.	lah	
28	Omission	As per rule, discuss the nature of the materials processed, and identify the estimated annual tonnages (amount) of such material.	pnb	

106.5 - Existing soil types, location, amount

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
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Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
29	Page 19	Address the soils on the general area of temporary lithium stockpiles and include soil maps from the area. It should be possible to acquire this data from the Natural Resources Conservation Service.	lah	

106.6 - Plan for protecting & re-depositing soils

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
30	Page 19	Address the soils on the area of the temporary lithium stockpiles.	lah	

106.7 - Existing vegetation - species and amount

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
31	Page 19	Address the vegetation on the area of temporary lithium stockpiles.	lah	

106.8 - Depth to groundwater, extent of overburden, geology

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
32	Page 19	To comply with rule R647-4-106.8, please address and briefly describe the geologic setting of the area. Refer to the geology map requested above.	lah & aaa	
33	Page 19	Include a brief description of adjacent groundwater wells and sources. The data can be acquired from the Division of Water Rights web site.	lah	
34	Page 23	Groundwater classification is listed as Class IV; however, there is no citation as to a source for "Class IV". For clarity, please cite the source from the Utah Division of Water Quality rule R317-6-3.	aaa	

106.9 - Location & size of ore, waste, tailings, ponds

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
35	Page 19	Address the temporary lithium stockpile locations and size.	lah	

R647-4-109 - Impact Assessment

109.1 - Impacts to surface & groundwater systems

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
36	Page 23, final paragraph	The text refers to Attachment 2 for the SPCC plan, but the SPCC plan is in Appendix B.	lah	
37	Omission	Discuss impacts to surface and groundwater systems from deleterious and acid-forming materials. Identify any impact mitigation measures that are or will be taken, either here or section 109.5.	pnb	

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
38	Appendix B	Please revise the SPCC plan. Plans are to be reviewed every five years. The plan in the Notice is from 2005 and is overdue for revision. General comments on the current SPCC plan: It lacks a facility diagram, it does not include certification or original signatures on the copy submitted, the storage tank inventory needs to be updated, and please report volumes in gallons, not cubic feet. Up-to-date information on spill plans can be accessed on the EPA website at http://www.epa.gov/osweroel/docs/oil/spcc/spccbluebroch.pdf .	aaa	

109.3 – Impacts to existing soil resources

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
39	Page 26, para 2	Refer text to a soils map noted under comment 29 as related to the limited area of soil in the stockpile area.	lah	

109.4 - Slope stability, erosion control, air quality, safety

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
39	Page 27, para 2	The Notice says that “after closure such facilities will be breached.” Please be more specific.	lah	
40	Page 27, Bullet 1	The Notice refers to attachment 3, but the reference should be to Appendix C.	lah	

109.5 - Actions to mitigate any impacts

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
41	Page 28, last para	Please change the reference to attachment 4 to Appendix D.	lah	
42	Page 28, last para	Please change the reference to Section 6.0 to either Section IX or R647-4-110.	lah	

R647-4-110 - Reclamation Plan

110.2 - Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
43	Page 29, last para	This paragraph references Figures 4.3 and 4.3 which should be 4.3 and 4.4.	lah	
44	Page 29, last para	As discussed please be more specific. Earlier discussion noted flow control structures were to be removed and “x” amount of breaches would be done at locations that utilized natural subaqueous pathways.	lah	

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
45	Page 30 para 1	Address what will be done with the liner at the star holding pond.	lah	
46	Page 30 Para 3	Pipelines - The natural gas pipeline should be capped as per requirements of the company that supplies the natural gas. This applies to all underground pipelines on the site. The Division recommends statements such as, "all buried pipelines will be reclaimed by rinsing any deleterious material, leave the buried pipeline in place and capping the ends," as this statement covers any future pipelines.	lah	
47	See figure 4.4 lah	On page 30 the Notice says roads to be leveled are indicated in green in the figures. Please state the length and width of the roads to be reclaimed. Please give additional detail about what type of reclamation will be done on the roads.	whw	
48	Page 31, Para 1, bullet 3	The text says abutments will be leveled to achieve minimum slopes of 30% or less. Please rewrite to "...slopes of 30% grade or less" or change to "less than xH:1V."	lah	

110.3 - Description of facilities to be left (post mining use)

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
49	Page 31, para 2, Bullet 1	As noted above (comment #15), more detail is needed concerning the surface facilities that are to remain, including flow control structures. The information is to match other sections in the Notice.	lah	
50	Page 31-32	More details are needed for the north side dike of pond 2, the west canal, and the brine inlet canal. Specifically, who will be responsible for long term maintenance of the facilities after reclamation is complete? What is the current maintenance schedule, and how can that be projected forward? The Division's goal is a stable, maintenance-free reclaimed project that accounts for the dynamic fluctuations in the ecosystems.	lah	

110.4 - Description or treatment/disposition of deleterious or acid forming material

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
51	Omission	Describe the treatment, location and disposition of any deleterious or acid-forming materials generated and left on-site. Per rule R647-4-111.4, "all deleterious or potentially deleterious material shall be safely removed from the site or left in an isolated or neutralized condition such that adverse environmental effects are eliminated or controlled."	pnb	

110.5 - Revegetation planting program

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
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Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
52	Omission	The Division agrees that much of the area would not support vegetation, but there are process facility and stockpile areas west and north of the star pond where revegetation may be possible. Please include a revegetation plan for these areas. Please recognize that the rules allow the Division to make a determination that revegetation has been accomplished within practical limits even if vegetation cover does not meet 70 percent of the cover in surrounding areas.	mpb	

R647-4-113 – Surety

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
53	Page 35	As noted above (comments 5 and 6), the Division does not have the original surety documents. Please provide original signed documents to the bond coordinator.	lah	
54	Page 36	Please update the surety calculations to 2013 costs, and escalate to 2018. Please use the Division's summary sheet.	lah	
55	Demo	The Division usually uses RS Means for demolition unit costs. If other sources are used, please list them and the unit costs.	whw	
56	Demo	Please list the RS Means or other reference for the unit cost of each of the items on the demolition worksheet.	whw	
57	Demo	Please list the dimension of each of the structures listed on the demolition worksheet.	whw	
58	Demo	Please list the type of floor for each structure. RS Means demolition costs do not include floor, footings or foundations.	whw	
59	Demo	Please include the disposal costs for demolition material. The cost to dispose of demolition material can be substantial.	whw	
60	Demo	Please include the unit cost for reclaiming the roads as \$2,000.00 per acre.	whw	
61	Earthwork	The summary sheet lists backfilling and grading costs of \$83,160.00, but the summary of earthwork costs shows a total of \$130,060.00. Please explain or resolve this apparent discrepancy.	whw	
62	Earthwork Labor	The Division uses the RS Means labor rates and wage rates that include overhead and profit.	whw	
63	Earthwork	Please include worksheets that show the production rates for the major earthwork activities. Those worksheets are on the Division's homepage and are based on the Caterpillar Handbook.	whw	
64	Earthwork	The unit costs used for earthwork are \$0.10 per cubic yard. Please show how this cost was calculated. Other sources use higher rates.	whw	
65	Earthwork	Please state the type of equipment that will be used. Given the environment, equipment designed for low pressure may be the most feasible.	whw	
66	Earthwork	The Division usually uses Blue Book equipment and operating rates. The Division will provide these rates upon request.	whw	